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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/571,614

Applicant(s)

HAYASHI, HIROYUKI

Examiner

USMAN KHAN

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-35 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 10 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) submitted on 03/10/2006, 06/12/2006, 01/11/2008, 10/28/2008, 04/20/2009, 06/11/2009, and 02/26/2010 have been considered by the examiner. The submissions are in compliance with the provisions of 37 CFR 1.97.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 - 5, 8/2-5, 10, 11/(1-5,10), 14 - 16, 25, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Iijima et al. (US Patent NO. 6,271,883).

Regarding **claim 1**, Iijima et al. teaches a device for controlling an imaging lens position (column 3, lines 18 – 32; driving focus lens), which performs a control of focusing based on a distribution of high-frequency components of image signals in a frame (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 lines 37 – 51,

column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency), which is acquired according to a focus lens position, comprising:

an acquirer for information relating to a lens position of a peak focus, which acquires information relating to a lens position of a peak focus (column 6 lines 13 – 22; peak value), which indicates a focus lens position, in which an integration value of said high-frequency component (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 lines 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency) in a predetermined area in said frame assumes a peak (column 6 lines 13 – 24; peak value and window);

a first storage, which stores information relating to a distribution of high-frequency components (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 lines 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency), which indicates a distribution of said high-frequency components at a focus lens position indicated by the information relating to a lens position of a peak focus (column 3 lines 18 – 32), in which the information relating to a distribution of high-frequency components is correlated with the information relating to a lens position of a peak focus, which is acquired by the acquirer for information relating to a lens position of a peak focus (column 3 lines 18 – 32);

an acquirer for selection information, which acquires selection information indicating which information relating to a distribution of high-frequency components stored by the first storage is selected based on the information relating to a distribution

of high-frequency components stored by the first storage (column 3 lines 18 – 32; correction means); and

a determinator for an imaging lens position, which determines an imaging lens position, a focus lens position for imaging (column 3 lines 18 – 32; correction means), based on the information relating to a lens position of a peak focus correlated with the information relating to a distribution of high-frequency components and stored in the first storage, wherein the selection information acquired by the acquirer for selection information indicates that the information relating to a distribution of high-frequency components has been selected (column 3 lines 18 – 32).

Regarding **claim 2**, as mentioned above in the discussion of claim 1, Iijima et al. teaches all of the limitations of the parent claim. Additionally, Iijima et al. teaches wherein information relating to a distribution of high-frequency components indicates the size of a high-frequency component (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 lines 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency) corresponding to respective positions of a predetermined area in a frame (column 6 lines 13 – 24; peak value and window); and said acquirer for selection information comprises:

means for computing a high-frequency component index, which computes a high-frequency component indicating a distribution of high-frequency components in a relationship with a predetermined position in the frame; and means for generating selection information dependent on a high-frequency component index, which

generates selection information based on the high-frequency component index (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 lines 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency).

Regarding **claim 3**, as mentioned above in the discussion of claim 1, Iijima et al. teaches all of the limitations of the parent claim. Additionally, Iijima et al. teaches wherein said means for computing a high-frequency component index comprises:

a scanner, which starts scanning information relating to a distribution of high-frequency components in a predetermined position in a frame as a starting position for scanning (column 6 lines 13 - 22; extracting high-frequency component; column 6 lines 13 – 24, window).

Regarding **claim 4**, as mentioned above in the discussion of claim 3, Iijima et al. teaches all of the limitations of the parent claim. Additionally, Iijima et al. teaches wherein said means for computing a high-frequency component index computes information relating to an increase of integration, which indicates an increase of integration value of an image signal along a scanning path of a scanner (column 6 lines 13 - 22; extracting only high-frequency component); and said means for generating selection information dependent on a high-frequency component index generates selection information for selecting information relating to a distribution of high-frequency components having the largest increase according to information relating to an increase

of integration (column 6 lines 13 - 22; choosing and extracting only high-frequency component).

Regarding **claim 5**, as mentioned above in the discussion of claim 3, Iijima et al. teaches all of the limitations of the parent claim. Additionally, Iijima et al. teaches wherein said means for computing a high-frequency component index computes information relating to an amount of scanning as a high-frequency component index, which indicates an amount of scanning by a scanner until the maximal value of a high-frequency component of an image signal appears (column 6 lines 13 - 22; choosing and extracting only high-frequency component); and said means for generating selection information dependent on a high-frequency component index generates selection information for selecting information relating to a distribution of high-frequency components having the smallest value of information relating to the amount of scanning (column 6 lines 13 - 22; choosing and extracting only high-frequency component).

Regarding **claim 8/2-5**, as mentioned above in the discussion of any one of claims 2 - 5, Iijima et al. teaches all of the limitations of the parent claim. Additionally, Iijima et al. teaches a setting unit for a predetermined position, which sets the predetermined position (column 6 lines 13 - 24, window).

Regarding **claim 10**, Iijima et al. teaches a device for controlling an imaging lens position (column 3, lines 18 - 32; driving focus lens), which performs a control of

focusing based on a distribution of high-frequency components of image signals in a frame (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 liens 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency), which is acquired according to a focus lens position, comprising:

an acquirer for information relating to a lens position of a peak focus, which acquires information relating to a lens position of a peak focus, which indicates a focus lens position (column 6 lines 13 – 22; peak value), in which an integration value of said high-frequency component (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 liens 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency) in a predetermined area in said frame assumes a peak (column 6 lines 13 – 24; peak value and window);

a computer (figure 2a items 53 and 55) for a high-frequency component index, which computes a high-frequency component index indicating a distribution of said high-frequency component in a relationship with a predetermined position in the frame (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 liens 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency);

a second storage, which stores a high-frequency component index, which is computed by the computer for a high-frequency component index at a focus lens position indicated by the information relating to a lens position of a peak focus (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 liens 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency), in which the high-frequency component index is correlated with the information relating to a lens position

of a peak focus, which is acquired by the acquirer for information relating to a lens position of a peak focus (column 3 lines 18 – 32);

an acquirer for selection information, which acquires selection information indicating which high-frequency component index stored by the second storage is selected based on the high-frequency component index stored by the second storage (column 3 lines 18 – 32; correction means); and

a determinator for an imaging lens position, which determines an imaging lens position, a focus lens position for imaging (column 3 lines 18 – 32; correction means), based on the information relating to a lens position of a peak focus correlated with the high-frequency component index and stored in the second storage, wherein the selection information acquired by the acquirer for selection information indicates that the high-frequency component index has been selected (column 3 lines 18 – 32; correction means).

Regarding **claim 11/(1-5,10)**, as mentioned above in the discussion of any one of claims 1 – 5 and 10, Iijima et al. teaches all of the limitations of the parent claim. Additionally, Iijima et al. teaches wherein an image signal is a luminance signal (column 3 lines 18 – 50 and column 5 lines 34 - 52, luminance signal).

Regarding **claim 14**, Iijima et al. teaches a method for controlling an imaging lens position (column 3, lines 18 – 32; driving focus lens), which performs a control of focusing based on a distribution of high-frequency components of image signals in a

frame acquired according to a focus lens position (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 lines 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency), comprising:

acquiring information relating to a lens position of a peak focus, which acquires information relating to a lens position of a peak focus (column 6 lines 13 – 22; peak value), which indicates a focus lens position, in which an integration value of said high-frequency component (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 lines 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency) in a predetermined area in said frame assumes a peak (column 6 lines 13 – 24; peak value and window);

storing information relating to a distribution of high-frequency components (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 lines 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency), which indicates a distribution of said high-frequency component at a focus lens position indicated by the information relating to a lens position of a peak focus (column 3 lines 18 – 32), in which the information relating to a distribution of high-frequency components is correlated with the information relating to a lens position of a peak focus, which is acquired by the step of acquiring information relating to a lens position of a peak focus (column 3 lines 18 – 32);

acquiring selection information, which acquires selection information indicating which information relating to a distribution of high-frequency components stored by the step of storing is selected based on the information relating to a distribution of high-

frequency components stored by the step of storing (column 3 lines 18 – 32; correction means); and

determining an imaging lens position, which determines an imaging lens position, a focus lens position for imaging (column 3 lines 18 – 32; correction means), based on the information relating to a lens position of a peak focus correlated with the information relating to a distribution of high-frequency components and stored by the step of storing, in which the selection information acquired by the step of acquiring selection information indicates that the information relating to a distribution of high-frequency components has been selected (column 3 lines 18 – 32).

Regarding **claim 15**, Iijima et al. teaches a method for controlling an imaging lens position (column 3, lines 18 – 32; driving focus lens), which performs a control of focusing based on a distribution of high-frequency components of image signals in a frame (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 lines 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency), which is acquired according to a focus lens position, comprising:

acquiring information relating to a lens position of a peak focus, which acquires information relating to a lens position of a peak focus (column 6 lines 13 – 22; peak value), which indicates a focus lens position, in which an integration value of said high-frequency component (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 lines 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high

frequency) in a predetermined area in said frame assumes a peak (column 6 lines 13 – 24; peak value and window);

computing a high-frequency component index, which computes a high-frequency component index indicating a distribution of said high-frequency component in a relationship with a predetermined position in the frame (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 lines 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency);

storing the high-frequency component index, which is computed by the step of computing high-frequency component index at a focus lens position indicated by the information relating to a lens position of a peak focus (column 6 lines 13 – 22, column 11 lines 22 – 28, column 12 lines 37 – 51, column 15 lines 45 – 58, column 17 lines 5 – 20, column 19 lines 56 – 65; high frequency), in which the high-frequency component index is correlated with the information relating to a lens position of a peak focus, which is acquired by the step of acquiring information relating to a lens position of a peak focus (column 3 lines 18 – 32);

acquiring selection information, which acquires selection information indicating which high-frequency component index stored by the step of storing is selected based on the high-frequency component index stored by the step of storing (column 3 lines 18 – 32; correction means); and

determining an imaging lens position, which determines an imaging lens position, a focus lens position for imaging (column 3 lines 18 – 32; correction means), based on the information relating to a lens position of a peak focus correlated with the high-

frequency component index and stored by the step of storing, in which the selection information acquired by the step of acquiring selection information indicates that the high-frequency component index has been selected (column 3 lines 18 – 32; correction means).

Regarding **claim 16**, Iijima et al. teaches a device for controlling an imaging lens position (column 3, lines 18 – 32; driving focus lens), comprising:

an acquirer for an image signal, which acquires an image signal from a large frame region in an imaging region and from a small frame region, which is a portion of the large frame region, in which the large frame region and the small frame region are correlated with a focus lens position (column 6 lines 13 – 24; frame/ window);

an acquirer for contrast information (column 3 lines 18 – 32; focus detection), which acquires contrast information indicating contrast from said image signal, which is correlated with said focus lens position (column 6 lines 13 – 24);

an acquirer for information relating to a lens position of a peak focus, which acquires information relating to a lens position of a peak focus indicating a focus lens position having a peak indicated by said contrast information (column 6 lines 13 – 24; peak value); and

a determinator for an imaging focus lens position, which determines suitable focus lens position for imaging (column 3 lines 18 – 32; correction means), wherein said determinator for an imaging focus lens position determines an imaging focus lens position if information relating to a lens position of a peak focus is acquired from said

small frame region (column 3 lines 18 – 32; correction means), based on that information relating to a lens position of a peak focus, and if information relating to a lens position of a peak focus is not acquired from said small frame region, based on information relating to a lens position of a peak focus of said large frame region (column 3 lines 18 – 32; correction means).

Regarding **claim 25**, Iijima et al. teaches a device for controlling an imaging lens position (column 3, lines 18 – 32; driving focus lens) comprising:

an acquirer for an image signal, which acquires image signals from a large frame region in an imaging region, from a small frame region, which is a portion of the large frame region, and from a middle frame region, which includes said small frame region and is included in said large frame region, in which the large frame region, the small frame region, and the middle frame region are correlated with a focus lens position (column 6 lines 13 – 24; frame/ window);

an acquirer for contrast information (column 3 lines 18 – 32; focus detection), which acquires contrast information indicating contrast from said image signal, which is correlated with said focus lens position(column 6 lines 13 – 24);

an acquirer for information relating to a lens position of a peak focus, which acquires information relating to a lens position of a peak focus indicating a focus lens position having a peak indicated by said contrast information(column 6 lines 13 – 24; peak value); and

a determinator for an imaging focus lens position, which determines suitable focus lens position for imaging, wherein said determinator for an imaging focus lens position (column 3 lines 18 – 32; correction means), which determines an imaging focus lens position based on information relating to a lens position of a peak focus of said small frame region if the information relating to a lens position of a peak focus is acquired from said small frame region (column 3 lines 18 – 32; correction means), which determines an imaging focus lens position based on information relating to a lens position of a peak focus of said middle frame region if the information relating to a lens position of a peak focus is not acquired from said small frame region (column 3 lines 18 – 32; correction means), and which determines an imaging focus lens position based on information relating to a lens position of a peak focus of said large frame region if the information relating to a lens position of a peak focus is not acquired from said middle frame region (column 3 lines 18 – 32; correction means).

Regarding **claim 28**, as mentioned above in the discussion of claim 8, Iijima et al. teaches all of the limitations of the parent claim. Additionally, Iijima et al. teaches wherein an image signal is a luminance signal (column 3 lines 18 – 50 and column 5 lines 34 - 52, luminance signal).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6, 8/6, 11/6, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (US Patent NO. 6,271,883) in view of Mikami et al. (US Patent NO. 5,067,161).

5. Regarding **claim 6**, as mentioned above in the discussion of claim 1, Iijima et al. teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein the high-frequency component index is barycentric deviation information indicating a distance between a barycentric position of a high-frequency component and a predetermined position; and said means for generating selection information dependent on a high-frequency component index, which generates selection information for selecting information relating to a distribution of high-frequency components having the smallest value of the barycentric deviation information. Mikami et al., on the other hand teaches wherein the high-frequency component index is barycentric deviation information indicating a distance between a barycentric position of a high-frequency component and a predetermined position; and said means for generating selection information dependent on a high-frequency component index, which generates selection information for selecting information relating to a distribution of high-frequency components having the smallest value of the barycentric deviation information.

More specifically, Mikami et al. teaches wherein the high-frequency component index is barycentric deviation information indicating a distance between a barycentric

position of a high-frequency component and a predetermined position (column 3 lines 32 – 42; when combined with the teachings of Iijima et al.); and said means for generating selection information dependent on a high-frequency component index, which generates selection information for selecting information relating to a distribution of high-frequency components having the smallest value of the barycentric deviation information (column 3 lines 32 – 42; when combined with the teachings of Iijima et al.).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Mikami et al. with the teachings of Iijima et al. to have a system to provide a good, proper, and reliable object recognition system hence improving the system capability.

Regarding **claim 8/6**, as mentioned above in the discussion of claim 6, Iijima et al. in view of Mikami et al. teach all of the limitations of the parent claim. Additionally, Iijima et al. teaches a setting unit for a predetermined position, which sets the predetermined position (column 6 lines 13 – 24, window).

Regarding **claim 11/6** as mentioned above in the discussion of claim 6, as mentioned above in the discussion of claim 6, Iijima et al. in view of Mikami et al. teach all of the limitations of the parent claim. Additionally, Iijima et al. teaches wherein an image signal is a luminance signal (column 3 lines 18 – 50 and column 5 lines 34 - 52, luminance signal).

Regarding **claim 17**, as mentioned above in the discussion of claim 16, as mentioned above in the discussion of claim 6, Iijima et al. in view of Mikami et al. teach all of the limitations of the parent claim. Additionally, Iijima et al. teaches wherein an image signal is a luminance signal (column 3 lines 18 – 50 and column 5 lines 34 - 52, luminance signal).

6. Claims 7/(2-5), 9, 11/9, 12/(1-5,9,10), 13/(1-5,9,10), 18 – 24, 26 – 27, and 29 - 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (US Patent NO. 6,271,883) in view of Official notice.

Regarding **claim 7/2-5**, as mentioned above in the discussion of any one of claims 2 - 5, Iijima et al. teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein the predetermined position is a central point of a frame.

The examiner takes Official Notice that it is old and well known in the art to find the central point of the image and use that position for processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to find the central point of the image and use the center point of the image for processing to better balance with the main image so as to improve image quality.

Regarding **claim 9**, as mentioned above in the discussion of any one of claims 1 - 6, Iijima et al. teaches all of the limitations of the parent claim.

Additionally, Iijima et al. teaches wherein the information relating to the distribution of high-frequency components indicates a size of a high-frequency component corresponding to respective positions of a predetermined area in a frame; and said acquirer for selection information.

However, Iijima et al. fails to teach means for displaying an image of the distribution of high-frequency components, which displays information relating to a distribution of high-frequency components as an image stored in said first storage; and means for inputting a selection, which acquires selection information from an operator based on the image of the distribution of high-frequency components displayed by said means for displaying an image of a distribution of high-frequency components.

The examiner takes Official Notice that it is old and well known in the art to display camera/image information such as high-frequency component on a display and having an inputting section for inputting a selection information from an operator.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to display camera/image information such as high-frequency component on a display and having an inputting section for inputting a selection information from an operator so as to quickly and easily inform the user of the system about the parameters of the image hence the user can quickly and easily improve the image using a user input.

Regarding **claim 11/9**, as mentioned above in the discussion of claim 9, Iijima et al. in view of official notice teaches all of the limitations of the parent claim. Additionally,

Iijima et al. teaches wherein an image signal is a luminance signal (column 3 lines 18 – 50 and column 5 lines 34 - 52, luminance signal).

Regarding **claim 12/(1-5,9,10)**, as mentioned above in the discussion of any one of claims 1 – 5, 9, and 10, Iijima et al. teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein an image signal is a signal acquired from one or a combination of RGB signals.

The examiner takes Official Notice that it is old and well known in the art to acquire RGB signals for processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to acquire RGB image signals for processing since doing so will require less processing and make the system quicker.

Regarding **claim 13/(1-5,9,10)**, as mentioned above in the discussion of any one of claims 1 – 5, 9, and 10, Iijima et al. teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein an image signal is a signal acquired from one or a combination of CMYG signals.

The examiner takes Official Notice that it is old and well known in the art to acquire CMYG signals for processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to acquire CYMG image signals for processing since these

the complementary color filters have a high light utility efficiency hence improving image quality.

Regarding **claim 18**, as mentioned above in the discussion of claim 16, Iijima et al. teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein an image signal is a signal acquired from one or a combination of RGB signals.

The examiner takes Official Notice that it is old and well known in the art to acquire RGB signals for processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to acquire RGB image signals for processing since doing so will require less processing and make the system quicker.

Regarding **claim 19**, as mentioned above in the discussion of claim 16, Iijima et al. teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein an image signal is a signal acquired from one or a combination of CMYG signals.

The examiner takes Official Notice that it is old and well known in the art to acquire CMYG signals for processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to acquire CYMG image signals for processing since these

the complementary color filters have a high light utility efficiency hence improving image quality.

Regarding **claim 20**, as mentioned above in the discussion of any one of claims 16 - 19, Iijima et al. teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein the said small frame member is arranged in the central portion of said large frame region.

The examiner takes Official Notice that it is old and well known in the art to find the central point and central portion of the image and use that position for processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to find the central point and central portion of the image and use the center point and central portion of the image for processing to better balance with the main image so as to improve image quality.

Regarding **claim 21**, as mentioned above in the discussion of any one of claims 16 - 19, Iijima et al. teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach a changer for arrangement, which changes the arrangement of at least one of said small frame region and large frame region.

The examiner takes Official Notice that it is old and well known in the art to have a changer for arrangement, which changes the arrangement of at least one of said small frame region and large frame region.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a changer for arrangement, which changes the arrangement of at least one of said small frame region and large frame region hence the main subject is always in the small frame region hence making it easier to process the main subject of the image.

Regarding **claim 22**, as mentioned above in the discussion of claim 20, Iijima et al. in view of official notice teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach a changer for shape of region, which changes at least one of the size and aspect ratio of said small frame region and/or large frame region.

The examiner takes Official Notice that it is old and well known in the art to have a changer for shape of region, which changes at least one of the size and aspect ratio of said small frame region and/or large frame region.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a changer for shape of region, which changes at least one of the size and aspect ratio of said small frame region and/or large frame region hence the main subject of varying size is always in the small frame region hence making it easier to process the main subject of the image.

Regarding **claim 23**, as mentioned above in the discussion of any one of claims 16 - 18, Iijima et al. in view of official notice teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein a plurality of said small frame regions is arranged in one of said large frame regions.

The examiner takes Official Notice that it is old and well known in the art to have wherein a plurality of said small frame regions is arranged in one of said large frame regions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of said small frame regions is arranged in one of said large frame regions hence a plurality of main subjects are always in the small frame regions hence making it easier to process the main subjects of the image.

Regarding **claim 24**, as mentioned above in the discussion of claim 23, Iijima et al. in view of official notice teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein a plurality of said large frame regions are arranged in an imaging region.

The examiner takes Official Notice that it is old and well known in the art to have wherein a plurality of said large frame regions are arranged in an imaging region.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of said large frame regions are arranged

in an imaging region hence these large regions can be ignored when processing the main small region of the image hence saving time and power.

Regarding **claim 26**, as mentioned above in the discussion of any one of claims 16 - 18, Iijima et al. in view of official notice teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein said middle frame region comprises a plurality of middle frame regions having a further inclusive relationship.

The examiner takes Official Notice that it is old and well known in the art to have wherein said middle frame region comprises a plurality of middle frame regions having a further inclusive relationship.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have wherein said middle frame region comprises a plurality of middle frame regions having a further inclusive relationship hence a plurality of main subjects are always in the small frame regions hence making it easier to process the main subjects of the image.

Regarding **claim 27**, as mentioned above in the discussion of claim 7, Iijima et al. in view of official notice teaches all of the limitations of the parent claim. Additionally, Iijima et al. teaches wherein an image signal is a luminance signal (column 3 lines 18 - 50 and column 5 lines 34 - 52, luminance signal).

Regarding **claim 29 and 30**, as mentioned above in the discussion of claims 7 and 8, respectively, Iijima et al. teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein an image signal is a signal acquired from one or a combination of RGB signals.

The examiner takes Official Notice that it is old and well known in the art to acquire RGB signals for processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to acquire RGB image signals for processing since doing so will require less processing and make the system quicker.

Regarding **claim 31 and 32**, as mentioned above in the discussion of claims 7 and 8, respectively, Iijima et al. teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein an image signal is a signal acquired from one or a combination of CMYK signals.

The examiner takes Official Notice that it is old and well known in the art to acquire CMYK signals for processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to acquire CMYK image signals for processing since these the complementary color filters have a high light utility efficiency hence improving image quality.

Regarding **claim 33**, as mentioned above in the discussion of claim 21, Iijima et al. in view of official notice teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach a changer for shape of region, which changes at least one of the size and aspect ratio of said small frame region and/or large frame region.

The examiner takes Official Notice that it is old and well known in the art to have a changer for shape of region, which changes at least one of the size and aspect ratio of said small frame region and/or large frame region.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a changer for shape of region, which changes at least one of the size and aspect ratio of said small frame region and/or large frame region hence the main subject of varying size is always in the small frame region hence making it easier to process the main subject of the image.

Regarding **claim 34**, as mentioned above in the discussion of claim 19, Iijima et al. in view of official notice teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein a plurality of said small frame regions is arranged in one of said large frame regions.

The examiner takes Official Notice that it is old and well known in the art to have wherein a plurality of said small frame regions is arranged in one of said large frame regions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of said small frame regions is arranged in one of said large frame regions hence a plurality of main subjects are always in the small frame regions hence making it easier to process the main subjects of the image.

Regarding **claim 35**, as mentioned above in the discussion of claim 34, Iijima et al. in view of official notice teaches all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein a plurality of said large frame regions are arranged in an imaging region.

The examiner takes Official Notice that it is old and well known in the art to have wherein a plurality of said large frame regions are arranged in an imaging region.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of said large frame regions are arranged in an imaging region hence these large regions can be ignored when processing the main small region of the image hence saving time and power.

7. Claims 7/6, 12/6, and 13/6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (US Patent NO. 6,271,883) in view of Mikami et al. (US Patent NO. 5,067,161) and further in view of Official notice.

Regarding **claim 7/6**, as mentioned above in the discussion of claim 6, Iijima et al. in view of Mikami et al. teach all of the limitations of the parent claim.

However, Iijima et al. in view of Mikami et al. fail to teach wherein the

predetermined position is a central point of a frame.

The examiner takes Official Notice that it is old and well known in the art to find the central point of the image and use that position for processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to find the central point of the image and use the center point of the image for processing to better balance with the main image so as to improve image quality.

Regarding **claim 12/6**, as mentioned above in the discussion of claim 6, Iijima et al. in view of Mikami et al. teach all of the limitations of the parent claim.

However, Iijima et al. in view of Mikami et al. fail to teach wherein an image signal is a signal acquired from one or a combination of RGB signals.

The examiner takes Official Notice that it is old and well known in the art to acquire RGB signals for processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to acquire RGB image signals for processing since doing so will require less processing and make the system quicker.

Regarding **claim 13/6**, as mentioned above in the discussion of claim 6, Iijima et al. in view of Mikami et al. teach all of the limitations of the parent claim.

However, Iijima et al. fails to teach wherein an image signal is a signal acquired from one or a combination of CMY signals.

The examiner takes Official Notice that it is old and well known in the art to acquire CMY signals for processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to acquire CMY image signals for processing since these the complementary color filters have a high light utility efficiency hence improving image quality.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

OHKAWARA et al. (US PgPub No. 2001/0048479) teaches that hill climbing method using high frequency is well known.

Ogino (US Patent No. 6,701,075) teaches that hill climbing method using high frequency is well known.

Omata et al. (US Patent No. 5,715,483) teaches that hill climbing method using high frequency is well known.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to USMAN KHAN whose telephone number is (571)270-1131. The examiner can normally be reached on Mon-Fri 6:45-3:15.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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04/02/2010
Patent Examiner

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